CHRONIC PULMONARY DISEASES

#921

Comm.
Dr. Gardner
Dr. Loosli
Dr. Wyatt

THE COUNCIL FOR TOBACCO RESEARCH - U.S.A.

110 E 59th STREET
NEW YORK, NEW YORK 10022

JUL 16 1973

APPLICATION FOR RESEARCH GRANT

Date: July 12, 1973

1. Name of Investigator(s): (include Title and Degree)

Theodore N. Finley, M.D. Director, Pulmonary Laboratory
W. Lawrence Drew, M.D., Ph.D. Director, Microbiology
David W. Golde, M.D. Assistant Professor of Medicine

2. Institution & Address:

Mount Zion Hospital and Medical Center, 1600 Divisadero Street
San Francisco, California 94115

3. Short Title of Project:

Studies on Bronchopulmonary Lavage Fluid in Smokers and Patients with Respiratory Diseases.

4. Proposed Starting Date:

December 1, 1973

5. Anticipated Duration of this Specific Study:

Three (3) years to December 31, 1976

6. Brief Description of Objectives or Specific Aims:

(see attached sheets)

7. Give a Brief Statement of your Working Hypothesis:

(see attached sheets)

8. Details of Experimental Design and Procedures: (Attach Separate Pages)

(see attached sheets)

9. Physical Facilities Available (Where Other than Administering Organization indicate Geographical Location).

(see attached sheets)

10. Additional Requirements:

None

11. Biographical sketches of all principal and professional personnel (append)

(see attached sheets)

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Introduction: Bronchopulmonary lavage in human subjects offers a unique opportunity to obtain and study alveolar macrophages and to diagnose certain pulmonary diseases. We have pioneered this technique and have lavaged approximately 300 humans.

The human alveolar macrophage represents the first line of cellular defense for the lung. Although relatively little is known about the functional and proliferative properties of this cell, it sppears to be significantly involved in various pulmonary disease states. We propose to study, by newly developed in vitro techniques, cells obtained at bronchopulmonary lavage in both normal human subjects (smokers and nonsmokers) and in patients with various clinical respiratory diseases. These studies are designed to provide information on: 1) the type and quantity of cells present in the lavage fluid, 2) their proliferative capacity, 3) their ability to mature, 4) their functional properties 5) the mechanisms involved in particle ingestion and microbial killing, and 6) their morphologic characteristics. Infectious processes may be pathogenically responsible for many of the responses that have been attributed to tobacco smoking. Therefore, the following additional studies will be performed on all lavage specimens: 1) viral, bacterial, fungal, mycoplasma and mycobacterial cultures, 2) cytology and 3) special stains for pneumocystis as well as fungi, AFB and other organisms. The morphology of the alveolar macrophage will be examined at both the light and electron microscopic level and correlated with clinical data and functional studies.

Experimental Design:

1. Determination of the proliferative capacity of the alveolar macrophage in normals, cigarette smokers and in patients with various respiratory diseases.

We have developed a new technique which permits the cultivation of human hematopoietic cells in liquid suspension. This method involves the use of an in vitro diffusion chamber apparatus which enables the cultivation of cells in liquid suspension and their easy retrieval for periods of up to one month. This technique is particularly well suited for studying cells of the macrophage series and has proved successful in culturing human pulmonary laveolar macrophages obtained to date from four subjects. Our results so far indicate that cigarette smokers have a several fold greater number of recoverable alveolar macrophages than nonsmokers. Data obtained in these initial studies also indicate that these cells have proliferative capacity. The significance of this must be clarified as a high priority.

The macrophages will be obtained by bronchopulmonary lavage using procedures previously discribed. The cells are cultured in the special chambers and harvested at periods ranging up to 30 days. Proliferation is assessed by changes in viable cell counts at various intervals and by the use of three techniques of tritiated thymidine radioautography. The first method involves a pulse lable with radiothymidine one hour prior to harvest. This provides information concerning the cells in DNA synthesis at the time of sacrificing the culture. In the second method the cells are exposed to tritiated thymidine for one hour after isolation from the lavage fluid.

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They are then cultured in medium containing "cold thymidine" and the radioautographic distribution of label is followed in culture. This method allows for confirmation of replication and provides data on progency-progenitor relationships and in vitro cell maturation. The third technique involves culturing cells continuously in the presence of tritiated thymidine for periods up to one week. In this method all cells passing through S phase will take up the label and thereby permit an estimation of proliferative potential in cell populations with a small growth fraction. Clearly, thymidine incorporation is not synonymous with proliferation in that DNA repair can occur without cellular replication. Therefore, in addition to total viable cell counts, mitotic indices will be determined in cultures containing colchemid. This information will be correlated with the radioautographic data. Labelled mitoses will be looked for in cultures containing both colchemid and tritiated thymidine.

Our published work demonstrates that pulmonary alveolar macrophages recovered from normal smokers have the ability to produce a factor that stimulates bone marrow cells to proliferate. This is of crucial importance for further study, in that the bone marrow is the most widely accepted origin of the alveolar macrophage. The production of a marrow stimulating factor, the increased number of recoverable alveolar macrophages and the increased number of circulating white blood cells in smokers appear to all be potentially related. The significance of this, in terms of health or disease, needs clarification.

2. Determination of the capacity for phagocytosis and microbial killing of cells obtained by bronchopulmonary lavage in smokers and non-smokers.

Green, working with experimental animals in vitro, has implied that alveolar macrophage function can be impaired directly by tobacco cigarette smoke in a dose-dependent manner. This observation could not be confirmed in alveolar macrophages recovered from normal human cigarette smokers, in studies published by Harris and Swenson. These discrepancies must be clarified. Huber has described the development of adaptive tolerance in animals intermittently exposed to environmental oxidants. Potential differences in the ability of the host to develop tolerance to tobacco smoke and the possible role these differences might have in the pathogenesis of lung disease need to be studied.

Cells obtained at lavage from smokers and nonsmokers will be studied to determine their phagocytic capacity using various microorganisms and particles, including carbon and latex. The process of phagocytosis will be documented by phase, interference, and electron microscopy and, in selected instances, cine-photomicroscopy on living cells. Microbial killing by phagocytic cells will be assessed by the standard colony count technique. In addition, a new method developed by Dr. Martin J. Cline, which permits assessment of microbial killing by various cell classes using a radioautographic technique, will be utilized. Similar tests will be performed on cells cultured at various intervals in order to determine changes in phagocytic and microbial killing capacity in the in vitro environment and to serve as a functional marker for cellular maturation. Results obtained in normals will be compared to those noted in various pathologic conditions.

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3. To determine the effect of surface active materials on the capacity of pulmonary macrophages for phagocytosis and microbial killing.

We have previously described quantitative differences in pulmonary surface active materials in smokers and nonsmokers. Synthesis of dipalmitoyl lecithin (the primary surfactant) by alveolar macrophages and the dependency of macrophages on the presence of a surfactant fraction required for intracellular killing have also been reported. It is of crucial importance to investigate these interrelationships in smokers and nonsmokers who are normal and who have disease.

The previously outlined tests for phagocytosis and microbial killing will be performed in the presence of various surface active constituents obtained by pulmonary lavage. The ability of the cells to ingest particles and to kill microorganisms will be studied in materials obtained from lavage in normals, smokers and patients with other pulmonary pathology. In addition, the participation of lipids will be assessed by using radioactively labelled purified lipids and determining the degree of cell entry in relationship to phagocytosed particles by radioautography.

4. To determine the usefulness of alveolar macrophages to diagnose viral illnesses, particularly in smokers. The potential role of viruses as etiologic factors in many of the lung diseases commonly attributed to tobacco smoking has been, for the most part, excluded.

Lavage macrophages from smokers and nonsmokers, with and without disease, will be cultured and studied with fluorescent antibodies for viral respiratory pathogens. Also direct hemadsorption and hemadsorption inhibition for identification will be attempted. In addition to diagnostic aspects, the lavaged cells from patients in several categories (normal, smokers, infected immunosuppressed, etc.) will be studied for their response to specific viral antigens as measured by transformation and interferon production.

Significance of this Research:

The results obtained from studies outlined in this proposal will provide applied information on the functional characteristics of the cells found in the bronchopulmonary spaces in smokers and nonsmokers. These data can shed light on the participation of the alveolar macrophage and the underlying pathogenetic mechanisms in various respiratory disease states. These studies are of key importance in sorting out the etiologic factors in many respiratory diseases and will help significantly to clarify many of the currently existing controversies on tobacco and health.

The effect of cigarette smoking on the pulmonary alveolar macrophage will be looked at intensively and resultant information on the reaction of the normal lung to smoke inhalation, and consequences of these reactive phenomena, can be used to resolve this important public health question. Information obtained on the proliferative, maturational, and functional properties of the human pulmonary alveolar macrophage will ultimately provide a means for favorably affecting the pulmonary response in various pathologic conditions.

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Use of Human Subjects:

Full approval for bronchopulmonary lavage in consenting adults has been obtained by the Research Sub-Committee on Clinical Research and Investigation Involving Human Subjects at the Mount Zion Hospital and Medical Center.

Physical Facilities Available: (Where other than Administering Organization indicate geographical location).

The bronchopulmonary lavages will be performed by Dr. Theodore N. Finley at Mount Zion Hospital and Medical Center in San Francisco. Dr. Finley has extensive experience with this technique and his department is fully equipped for the procedure. In vitro cellular studies will be performed in the laboratories of the Cancer Research Institute of the University of California in San Francisco. Currently, all of the techniques described in this application are being performed in these laboratories. The Microbiologic cultures including virologic will be performed in the Clinical Laboratories of Mount Zion Hospital and Medical Center which includes a functioning clinical virology laboratory under the direction of Dr. W. Lawrence Drew. Interferon and cell transformation studies will be performed in the space described below; these techniques are also in use at present.

Space available encompasses 1400 sq.ft. at Mount Zion Hospital. The laboratory is well equipped for tissue culture work with two tissue culture rooms, laminar flow hood, incubators and a wide range of special microscopic equipment including cine-photomicroscopy. Electron microscopy time is purchased under contract from the Department of Pathology at the University of California Medical Center, San Francisco.

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Theodore N. Finley, M.D.

12. Publications:

1. Golde, D.W. and Cline, M.J. Growth of Human Bone Marrow in Liquid Culture. Blood Jan. 1973.

2. Pratt, S.A., Finley, T.N., Smith, M.H. and Ladman, A.J. A Comparison of Alveolar Macrophages and Pulmonary Surfactant obtained from the Lungs of Human Smokers and Nonsmokers by Endo-bronchial Lavage. Anat. Record 163: 497, 1969.

3. Pratt, S.A., Smith, M.H., Ladman, A.J. and Finley, T.N. The Ultrastructure of Alveolar Macrophages from Human Cigarette Smokers and Nonsmokers. Lab. Invest. 24:5, 331, 1971.

4. Finley, T.N. and Ladman, A.J. Low Yield of Pulmonary Surfactant in Cigarette Smokers. New Eng.J.Med. 286:223, Feb. 1972.

5. Golde, D.W., Finley, T.N. and Cline, M.J. Production of colony stimulating factors by Human Macrophages. Lancet. Dec.30, 1972. pp 1397-1399.

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Theodore N. Finley, M.D.

13. Budget (1st year)

A. Salaries (Personnel by names)	% time	Amount
Professional.		
Dr. Theodore N. Finley	25	
Dr. W. Lawrence Drew	20	
Robert Hoo, Ph.D.	100	
Dr. David W. Golde		
Fringe benefits at 14% (R. Hoo Ph.D)		
Technical		
Research Tech II	100	
Research Tech I	50	
Secretary	50	
Fringe benefits at 14%		
	Sub-Total	
B. Consumable Supplies (list by categories)		
Tissue culture media	5,000	
Glassware	2,500	
Isotopes	1,500	
Tissue culture (tubed)	3,500	
Reagents (Antisera antigens etc)	1,000	
Electron Microscope supplies & rental	5,000	
	Sub-Total	$18,500
C. Other Expenses (itemize)		
Travel	2,000	
Publications	1,000	
Volunteer subjects & medical expenses	1,000	
	Sub-Total	$ 4,000
D. Permanent Equipment (itemize)		
Fiberoptiscope	4,000	
Freezer (-70°)	2,000	
Cytocentrifuge	1,000	
2 X CO_2 incubators	5,000	
Tissue culture microscope	1,000	
Water baths, TC drum etc.	500	
	Sub-Total	$13,500
E. Overhead (15% of A+B+C)		$10,071
	TOTAL	$90,712

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Theodore N. Finley, M.D.

13. Budget (continued)

Estimated Future Requirements:

	Salaries	Consumable Suppl.	Other Expenses	Permanent Equip.	Overhead	Total
Year 2	REDACTED	$18,500	$4,000	-0-	$11,000	$78,500
Year 3		$18,500	$4,000	-0-	$11,500	$81,000

It is understood that the applicant and institutional officers in applying for a grant had read and found acceptable the Council's "Statement of Policy Containing Conditions and Terms Under Which Project Grants Are Made".

Signature Theodore N. Finley
Director of Project

Telephone 415-567-6600 Ext.645

Signature [signature]
Executive Director

Telephone 415-567-6600 Ext.201

Signature [signature]
Controller

Telephone 415-567-6600 Ext 205

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CURRICULUM VITAE

Theodore N. Finley, M.D.

Date of Birth: REDACTED

Place of Birth:

Education and Training: University of Washington, B.S. (Chemistry)
Johns Hopkins Medical School,
Internship: San Francisco County Hospital,
Residency: Univ. of Calif. Medical Center and
San Francisco County Hospital

REDACTED

Scholarships or Fellowships Held: Research Fellow, 1957-1958, University of Buffalo, Department of Physiology;
Research Fellow, American Trudeau Society, University of California, 1958-1961

Positions Held: Clinical Instructor in Medicine, Cardiovascular Research Institute, Univ. of California Medical Center, 1958-1961;
Assistant Professor of Anesthesiology, Physiology and Biophysics, and Director of Anesthesiology Research, University of Washington School of Medicine, 1961;
Associate Professor, University of Washington School of Medicine, July 1964;
Associate Professor of Medicine, University of New Mexico School of Medicine, September 1964 - June 1968
Associate Chief of Medicine and Director of the Pulmonary Laboratory, Department of Medicine, Mount Zion Hospital and Medical Center, June 1, 1968;
Associate Clinical Professor, Univ. California Medical Center, San Francisco, June 1968
Medical Director Pulmonary Laboratory Mount Zion Hosp. 1968

Research Appointments: See above

Board Certification: Qualified for Internal Medicine

Professional and Scientific Memberships:

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Publications:

1. Finley, T.N., C. Lenfant, P. Haab, J. Pilper and H. Rahn. Venous admixture of pulmonary circulation of anesthetized dog. J. Appl. Physiol. 15:419, 1960.
2. McIlroy, M.B., J. Butler and T.N. Finley. Effects of chest compression on reflex ventilation drive and pulmonary function. J. Appl. Physiol. 17:701, 1962.
3. Finley, T.N. The relative efficiency of gas transport in the lung in relation to the ventilation perfusion ratio. WADD Technical Report 60-1, 1960.
4. Swenson, E.W., T.N. Finley and S.V. Guzman. Unilateral hypoventilation during temporary ipsilateral pulmonary artery occlusion in man. J. Clin. Invest. 40:828, 1961.
5. Severinghaus, J.W., E.W. Swenson, T.N. Finley, M.T. Lategola and J. Williams. Unilateral hypoventilation produced in dogs by occluding one pulmonary artery. J. Appl. Physiol. 16:53, 1961.
6. Finley, T.N. The determination of uneven pulmonary blood flow from the arterial oxygen tension during nitrogen washout. J. Clin, Invest. 40:1727 1961.
7. Finley, T.N., E.W. Swenson, J.H. Comroe, Jr. The cause of arterial hypoxemia at rest in patients with "alveolo-capillary syndrome". J. Clin. Invest. 41:618, 1962.
8. Gardner, R.E., and T.N. Finley. The effect of cardiopulmonary bypass on the mechanical properties of the lung and surface tension of the lung extracts. International Surgical Congress, Dublin, Summer 1961. Bulletin de la Societe Internationale de Chirurgie 5:542,1962.
9. Finley, T.N. Pulmonary surface activity and the problems of atelectasis, wetting, foaming and detergency in the lung. Anesthesia and Analgesia 42:35, 1963.
10. Zehner, Harry Jr., Richard E. Gardner, and T.N. Finley. Pulmonary function following reconstruction of a previously closed major pulmonary artery. Am. Rev. Resp. Dis. 87:694, 1962.
11. Finley, T.N., T.R. Hill, J.J. Bonica. Effect of varying intrapleural pressure on pulmonary shunt through atelectatic dog lung. Amer. J. Physiol. Oct. 1963.
12. Finley, T.N., W.H. Tooley, E.W. Swenson, R.E. Gardner, and J.A. Clements. Pulmonary surface tension in experimental atelectasis. Am. Rev. Resp. Dis. 89:372, 1964.
13. Swenson, E.W., D.A. Funk, S.V. Guzman and T.N. Finley. Vascular shunts in the lungs: Clinical evaluation by temporary unilateral pulmonary artery occlusion. J. Thoracic and Cardiovascular Surgery 48:671, 1964.
14. Morgan, Thomas E., T.N. Finley, G.L. Huber and Helen Fialkow. Alterations in pulmonary surface active lipids during exposure to increased oxygen tension. J. Clin. Invest. 44:1737, 1965.
15. Morgan, Thomas E., Finley, Theodore N., and Fialkow, Helen. Comparison of the composition and surface activity of "alveolar" and whole lung lipids in the dog. Biochem. Biophys. Acta. 106:403, 1965.
16. Huber, G.L., Edmunds, L.H., and Finley, T.N. Acute effects of saline lavage on pulmonary mechanics and morphology. Surgical Forum 17:113, 1965.
17. Finley, T.N., Swenson, E.W., Curran, W.S., Huber, G.L. and Ladman, A.J. Bronchopulmonary lavage in normal subjects and patients with obstructive lung disease. Ann. Int. Med. 66:651, 1967.

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Theodore N. Finley, M.D.

Publications - continued.

18. Ladman, A.J., Pratt, S.A., and Finley, T.N. Exfoliative cytology of the lung alveolus; Preliminary electron microscopic observations on cells obtained in vivo from human lungs. 25th Annual EMSA Meeting.
19. Finley, T.N., Ladman, A.J., Brewer, L., and McKay, M.E. A morphological and lipid analysis of the alveolar lining material in the dog. J. Lipid Res. 9:357, 1968.
20. Finley, T.N., Simson, G., McKay, M.B., and Lovekin, W.S. Effect of high hematocrit on ventilation at 5316 feet. 9th Annual Aspen Conference.
21. Finley, T.N. Anesthesia and Atelectasis. Editorial Views, Anesthesiology, 29:5, Sept-Oct. 1968.
22. Pratt, S.A., Finley, T.N., Ladman, A.J., Smith, M. A comparison of alveolar macrophages and pulmonary surfactant (?) obtained from the lungs of human smokers and nonsmokers by endobronchial lavage. Anat. Rec. 163:497, 1969.
23. Finley, T.N. Acute Pulmonary Embolism. Current Therapy, 1970.
24. Pratt, S.A., Smith, M.H., Ladman, A.J. and Finley, T.N. The ultrastructure of Alveolar Macrophages from Human Cigarette Smokers and Nonsmokers. Lab. Invest. 24:331, 1971.
25. Mann, P.E.G., Cohen, A.B., Finley, T.N., and Ladman, A.J. Alveolar Macrophages: Structural and Functional Differences between Nonsmokers and Smokers of Marijuana and Tobacco. Lab. Invest. 25:111, 1971.
26. Huber, G.L., Edmunds, L.H.Jr., and Finley, T.N. Effect of Experimental Saline Lavage on Pulmonary Mechanics and Morphology. Am. Rev. Resp. Dis. 104:337, 1971.
27. Finley, T.N. and Ladman, A.J. Low Yield of Pulmonary Surfactant in Cigarette Smokers. New Eng. J. Med. 286:223, 1972.
28. Golde, D.W., Finley, T.N. and Cline, M.J. Production of colony stimulating factors by Human Macrophages. Lancet (in press Jan. 1973).

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R: REDACTED MATERIAL

CURRICULUM VITAE

WILLIAM LAWRENCE DREW

BORN:

MARRIED: REDACTED

CHILDREN:

EDUCATION: Regis High School, 55 East 84th St., New York, N.Y.

Holy Cross College, Worcester, Mass.: Bachelor of Art.

Jefferson Medical College, Philadelphia, Pennsylvania
M.D.

Experimental Pathology
Virology Ph.D.

TRAINING: Straight Medical Internship - Jefferson Med. Coll. Hospital 1962-63

Assistant Residency in Medicine - Univ. Calif. Hosp. San Francisco, Ca. 1966-68

N.I.H. Fellow in Clin. Microbiology- Univ. Washington Seattle, Wash. 1968-69

N.I.H. Grant for part-time research in Endocrinology During Senior Year in Medical School

BOARD CERTIFICATION:

American Board of Internal Medicine December 4, 1970

American Board of Medical Microbiology May 4, 1972

PRESENT: Mount Zion Hospital, Director of Clin. Microbiology and Virology Laboratory and Associate Chief, Medicine, In charge of Infectious Diseases, and Hospital Epidemiologist.

Assistant Clinical Professor of Clinical Pathology and Laboratory Medicine - Univ. of Calif. School of Medicine, San Francisco, California 94122 July 1, 1971 - Present

MILITARY: Commissioned as 1st Lieutenant U.S. Army Reserve Medical Corps in May, 1963

Promoted to Captain, February, 1965

SOCIAL SECURITY REDACTED

CALIFORNIA LICENSE

5/22/72

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MEMBERSHIP

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AWARDS AND OFFICES

Scholarship - Regis High School
New York State College Scholarship
Francis Shain Scholarship - Jefferson Medical College

Alpha Omega Alpha - Jefferson Chapter
Hobart Hare Medical Honor Society - Jefferson Medical College
S. S. Cohen Prize in Medicine - 1962
Charles Labelle Prize as the Outstanding Graduate Student --- 1966

President, Student Council - Jefferson Medical College 1961-62
Chairman, Dean's Committee - Jefferson Medical College 1961-62

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- PUBLICATIONS -

1. Gilgore, S.C.; Drew, W. L. and Rupp, J.J.: Effects of salicylate on plasma free fatty acids and blood glucose. Clinical Research 10: 400 (4) December, 1972.

2. Gilgore, S.G.; Drew, W. L. and Rupp, J.J.: The effects of salicylate on plasma non-esterified fatty acids. The American Jour. of the Med. Sciences 245: 456 (4), April, 1963.

3. Gilgore, S. G.; Drew, W. L. and Rupp, J.J.: The effects of salicylate on aspects of carbohydrate and lipid metabolism. Presented at the Midwest Meeting of the American College of Physicians. Detrpit, Michigan, November 21-23, 1963. Abstract published in Annals of Internal Medicine, 60: 333 (2) February, 1964.

4. Drew, W. L. : The effect of 5-fluoro-2'-deoxyuridine on Herpes Simplex virus growth and cytopathogenic effect. Ph.D. Thesis, 1966.

5. Drew, W. L. and Love, R.: Production of Herpes Simplex virus by HeLa cells treated with 5-fluoro-2'-deoxyuridine. The American Jour. of Pathology. 53: 169, July, 1968.

6. O'Toole, R.; Drew, W.L.; Dahlgren, B. and Beaty, H.: Outbreak of Methicillin-resistant Staphylococcus aureus infection in hospital and nursing homes. Presented at the Ninth Interscience Conference on Antimicrobial Agents and chemotherapy. October 27-29, 1969. JAMA 213: 257-263 (2), July 13, 1970.

7. Drew, W.L.; O'Toole, R. and Sherris, J.C.: Failure of Cloxacillin discs to detect resistance of Staphylococcus aureus to Penicillinase-resistant Penicillins. Presented at the Ninth Interscience Conference on Antimicrobial Agents and Chemotherapy. October 27-29, 1969.

8. Drew, W. L. ; Barry, A.L.; O'Toole, R. and Sherris, J.C.: Reliability of the Kirby-Bauer Disc Diffusion Method for detecting "Methicillin-resistant" strains of Staphylococcus aureus. Applied Microbiology 24: 240-247 (2), August, 1972.

9. Drew, W.L.; Pedersen, A. N. and Roy, J.J.: An Automated slide staining machine. Applied Microbiology 23: 17-20 (1), January, 1972.

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CURRICULUM VITAE

Name: David W. Golde, M.D.

Address:

Date of Birth: REDACTED

Marital Status:

EDUCATION: REDACTED

B.S.	Fairleigh Dickinson University,	January,
M.D., CM	McGill University,	May,

LICENSURE & BOARD CERTIFICATION:

Diplomate, American Board of Internal Medicine, June, 1972
Diplomate, National Board of Medical Examiners, #86221

Maryland	#C11431
Washington, D.C.	#3776
California	#15682

MILITARY SERVICE:

Surgeon, United States Public Health Service, July, 1967 - July, 1970. Assigned to National Institutes of Health

HONORS AND SCHOLARSHIPS:

Alpha Omega Alpha Honor Society, 1965, McGill University
Phi Omega Epsilon Honor Society
University Scholar, McGill University, 1963-1966
New Jersey College of Surgeons Medical Scholarship, 1963-1965
Mosby Award, 1966
J. Francis Williams Prize in Medicine and Clinical Medicine, McGill University, Department of Medicine, 1966

EXPERIENCE:

Assistant Research Chemist, General Foods Corporation February - August, 1962

Research and Clinical Fellowship in Cardiology, San Juan de Dios Hospital, San Jose, Costa Rica, Summers 1963, 1964, 1965

Consultant, Continuing Education and Training Branch, Division of Regional Medical Programs, National Institutes of Health, 1967-1968

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TRAINING:

Straight Internship in Medicine, University of California Hospitals, San Francisco, California 1966-1967

Resident in Clinical Pathology, Clinical Center, National Institutes of Health, Bethesda, Maryland 1968-1969

Hematology Fellow and Resident in Clinical Pathology, Hematology Service, Clinical Center, National Institutes of Health, Bethesda, Maryland 1969-1970

Resident in Medicine, University of California Hospitals, San Francisco, California 1970-1971

Fellow, Cancer Research Institut e and Resident in Medicine, University of California Hospitals, San Francisco, California 1971-1972

FACULTY POSITIONS:

Instructor in Medicine, University of California School of Medicine, July, 1972

Assistant Professor of Medicine, University of California School of Medicine, July, 1973

PRESENTATIONS:

Systolic Phases of the Cardiac Cycle in Children, March, 1969
American College of Cardiology, New York City

The Albumin Agglutination Phenomenon. November, 1969
American Association of Blood Banks, Houston, Texas

Spectrum of Albumin Auto-Agglutinins. October, 1970
American Association of Blood Banks, San Francisco, California

Identification of a Morphologically Distinctive Cell in Cultures of Neoplastic Plasma Cells. April, 1972.
American Federation for Clinical Research, Atlantic City, New Jersey

Cultivation of Normal and Neoplastic Human Bone Marrow Leukocytes in Liquid Suspension, June, 1972
Seventh Leukocyte Culture Conference, Quebec, Canada

Medical Oncology Training in the Cancer Center, Sept., 1972
West Coast Cancer Symposium, San Francisco, California

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PUBLICATIONS:

1. Golde, D.W., Aetiology of Regional Enteritis. Lancet 1144-1145. May, 1968.

2 Golde, D.W. and Epstein, W., Mixed Cryoglobulins and Glomerulonephritis. Annals of Internal Medicine 66:6, 1221-1227, Dec., 1968.

3. Golde, D.W., McGinniss, M.H., and Holland, P.V., Mechanism of the Albumin Agglutination Phenomenon. Vox Sanguinis 16: 465-469, June, 1969.

4. Zierdt, C. and Golde, D.W., Deoxyribonuclease-Positive Staphylococcus epidermis Strains. Applied Microbiology 20: 54-57, July, 1970.

5. Golde, D.W. and Burstin, L., Systolic Phases of the Cardiac Cycle in Children. Criculation 42:6, 1029-1036, Dec., 1970.

6. Golde, D.W., Greipp, P., Sanzenbacher, L., Gralnick, H., Hematologic Abnormalities in Fibrogenesis Imperfecta Ossium. Journal of Bone and Joint Surgery 53A:2, 365-370, March, 1971.

7. Golde, D.W., McGinniss, M.H., and Holland, P.V., Serum Agglutinins to Commercially Prepared Albumin. American Journal of Clinical Pathology 55: 655-658, June, 1971.

8. Wyler, D.J., Golde, D.W., and Grausz, H., Bacterial Endocarditis in a Patient with a Saphenous Vein Graft A-V Fistula Receiving Dental Work. California Medicine 117:5, 75-76, Nov., 1972.

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Research and training experience:

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References:

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